
Institutional Impediments to the Construction of Detached Small Lot Housing

Research Report

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This publication is one of the many items of information published by CMHC with the assistance of federal funds.

**INSITUTIONAL IMPEDIMENTS TO THE
CONSTRUCTION OF DETACHED SMALL LOT HOUSING**

**A
CANADA HOUSING AND MORTGAGE CORPORATION STUDY**

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Several meetings were held in the four Municipalities of Burnaby, Coquitlam, District of North Vancouver, and Richmond, and the authors wish to thank the staffs and elected officials for their time, as well as their positive contribution toward this study on small lots.

PROJECT TEAM

The Project Team consisted of Neil Griggs, who acted as team leader, and Mr. Richard Hulbert. Mr. Griggs is a development consultant and project manager, and has managed a number of large scale housing and commercial projects in British Columbia. With a background in Community Planning and his past fifteen years in development, he is conversant with the land subdivision and subsequent development process from the viewpoint of both the public and private sector.

Mr. Hulbert is an architect who has an extensive practice throughout Canada in both residential and commercial buildings. His firm is the recipient of numerous awards, particularly in the field of housing. He has written several articles and lectured on planning, design, and construction topics. He was author of Design Guidelines and Zoning Bylaws Criteria developed for the G.V.R.D., and is considered a pioneer in the field of small lot housing.

DEFINITION OF PROBLEM.

With the downturn in the economy in British Columbia, housing starts were reduced by half from the peak of 1980. This is in part due to a decline in demand in the ownership market for the conventional freehold detached house and the condominium multiple ground oriented unit. The Lower Mainland Chapter of the Housing and Urban Development Association of Canada believe that under current market conditions there is a market for a housing form between the freehold detached house and the condominium row house which is not being catered to. This housing form is a small freehold house on a small lot which can be modified or added on to and which has low space heating costs. In order to support their belief, HUDAC has constructed a prototypical display house known as the "Triple A" house on a Vancouver site, for viewing by the general public. This house was visited by 13,400 people over a one month period, each visitor paying a \$2.00 fee. The dwelling comprises a 60 sq. metre one bedroom unit on the ground floor, with 40 sq. metres of attic space suitable for future development. Rooms can be added to the side or the rear of the unit. The building has been built to the R-2000 requirements of the Energy Mines & Resources Canada program. It is indicated that the unit could sell in 1983 for \$31,500 plus the cost of land, in the Greater Vancouver area. In view of the very strong interest in the house, HUDAC would now like to assess both consumer reaction to the prototypical house in order that the concept may be refined, as well as institutional attitudes to the provision of small lot subdivisions to accommodate this type of house.

This study concerns the latter, and questions whether it is possible:

- (a) to construct an average sized home on smaller than existing lots and still provide adequate space for on-site parking, open space, privacy, safety, street-scape, and building flexibility;
- (b) to determine if any site planning criteria have to be traded off in order to provide this form of small lot subdivision;
- (c) to determine what changes are required at the institutional level in terms of zoning, site regulations, and attitude, to accommodate this more land-efficient form of detached housing on smaller lots.

STUDY OBJECTIVES

The purpose of the study was to determine Municipal attitudes toward small lot subdivisions which could accommodate the prototype HUDAC Triple-A house concept.

In addition to describing the Municipal development control process, the study set out to identify development control issues raised by Municipalities with respect to the small lot house and their role in the control of small lot development. This discussion took place within the context of CMHC's criteria, and the study examined the extent to which the Municipal controls ensure a level of quality which protects the Corporation's insured lending business. The study set out to look at alternative approaches that could be used by Municipalities to address the small lot issue. The intention was not to develop a model mechanism, but rather to examine directions which Municipalities could pursue in developing effective control mechanisms of their own.

The study has been restricted to the subdivision of land for detached housing with freehold ownership and for areas that can accommodate new small lot subdivisions, rather than small lot infill housing.

METHODOLOGY

The study identified Municipal attitudes toward small lot housing by interviewing key government officials and politicians, and by examining the existing institutinal controls such as zoning bylaws through which officials and politicians operate. The four Municipalities that were selected each had to have a recently introduced small lot land use zone, and each had to have land capable of accommodating new small lot subdivisions. The concept of infilling a small lot house into an existing neighbourhood, though a related issue, was not examined. The Municipal controls examined associated with lot size, were as follows:

- Floor area ratios
- Minimum lot size
- Setbacks, sideyards
- Parking requirements
- Subdivision standards
- Permit and fee schedules
- Community Planning issues
- Life safety
- Fire regulations.

The tasks and procedure followed in the study were as follows:

1. A structured examination of existing Municipal and Provincial subdivision plans, bylaws, and zoning documents.
2. The preparation of conceptual drawings showing the planning principles associated with a small lot house. These principles

focused on lot size and shape and their inter-relationships flowing from the prototypical house type. The purpose of these drawings was to provide a clear illustration of the design principles to be used in the interviews with Municipal officials and politicians.

3. Interviews with senior officials and politicians in the four Municipalities on a one-to-one situation, utilizing the findings from the institutional zoning review as well as using the conceptual plans as a visual aid. The interview was open-ended, allowing the respondent to articulate his opinions as to the merits and limitations of a small lot zoning by-law.

The instruments developed for the examination of the institutional controls and the open-ended interviews with Municipal officials and politicians, together with the selection of Municipalities, was reviewed with the CMHC Project Manager prior to implementation.

GOVERNMENT REGULATION OF LAND USE

Regulation and other forms of government intervention regarding real property occurs on two occasions. The first intervention occurs at the production stage of real property through subdivision controls, and the second intervention at the development stage through zoning and building codes for the developed lot.¹

In Canada, the allocation of authority has evolved such that local governments provide the major sources of real property regulation. In British Columbia, the Province has established a procedure by which the local governments have authority to plan through the preparation of Community Plans. The Community Plan sets out the goals and directions of growth for that community. The Community Plan is then implemented, using regulations to govern land use, subdivision, development and building construction of real property.

The subdivision of real property is defined as being the process of dividing a legal parcel of land into two or more separate parcels of land. Government regulation at this point concerns itself with ensuring such aspects as the ability to service each lot, that the lots are of "adequate size", and that the community development process occurs in an "orderly fashion".² These community issues for which municipal staff prepare their subdivision regulations have evolved from the

1. Economic Council of Canada., Regulation and Other Forms of Government Intervention Regarding Real Property. Technical Report #13. S.W. Hamilton, 1981, p.7.
2. Ibid., p.22

original purpose of subdivision regulations which were simply designed to ensure correct surveys and to facilitate title regulation. The system has evolved to include the regulation of lot sizes, site design, road patterns, and sidewalks, sewer services, storm and water, as well as the dedication of lands for public purposes.

The Municipalities in B.C. exhibit considerable diversity in terms of which controls they invoke through their subdivision zoning and development bylaws. In a recent study on this topic, it was found that those municipalities facing substantial new subdivision applications relied heavily upon subdivision bylaws as the principal means of regulating property, and others with little subdivision activity relied upon development controls.³ The Province of British Columbia regards the subdivision process as a local matter handled by the Approving Officer, and no Ministerial approval is required prior to the passing of local subdivision bylaws.

Development regulations come into force generally when some physical change takes place on the land, either at the initial development or at subsequent redevelopment. Regulations of development generally take the form of a zoning bylaw which prescribes the permitted uses of each parcel of land. The density, the minimum size, the bulk of building, and off-street parking requirements for each parcel are prescribed in these bylaws. Development regulation is based on administrative and not legal controls, as distinct from zoning bylaws which permit a property owner to develop, i.e. outright use.⁴

3. Ibid., p.52

4. Ibid., p.64

CONVENTIONAL REGULATIONS FOR DETACHED HOUSING IN FOUR B.C. MUNICIPALITIES

Until very recently, the production of detached housing has been associated with the conventional subdivision process. The Community, with input from the public and with recognition of local housing preferences and demographic trends, has generally produced large sized lot subdivisions for the conventional detached house. This has given builders considerable flexibility in siting the housing, and subsequent owners the ability to make modifications. Site and lot regulations have been developed that continue to permit this building flexibility.

Lot size regulations in standard subdivisions control minimum and maximum lot areas, minimum widths and minimum lot depths. These three controlling measurements, area, width and depth, vary with each of the detached housing residential zones. Table #1 summarizes these three regulatory devices for each of the residential zones.

A review of these single family lot sizes and regulations shows a wide range of both single family lot sizes and regulations within these four Municipalities. Each had developed its own range of single family zones in an attempt to provide a variety of lifestyle opportunities. Thus, Municipalities have controlled land use by density of dwelling units per acre, and in this process have defined a series of lot sizes, which appear to be somewhat arbitrary.

Table #1 Lot Regulations

<u>Municipality</u>	<u>Zone</u>	<u>Max. Lot Area m²</u>	<u>Min. Lot Width (m)</u>	<u>Min. Lot Depth (m)</u>
Burnaby	R1	890	24.5	N/A
	R2	670	18.5	-
	R3	560	15.0	-
	R4	800	22.0	-
	R5	670	18.5	-
	R9	372	12.2	-
Coquitlam	RS1	650	13.5	N/A
	RS3	555	13.5	-
	RS4	375	12.5	21.0
North Vancouver District	RS1	4000	30.0	N/A
	RS2	1100	24.0	-
	RS3	550	15.0	-
	RS5	370	12.0	27.0
Richmond	GR	630	18.0	24.0
	RIII	648	18.0	24.0
	RII	540	18.0	24.0
	RIV	405	13.5	22.0
	RV	N/A	N/A	N/A

N/A Not applicable.

Site Regulations in standard subdivisions control the placement of structures on the lot through the use of building setbacks, lot coverage, density, and building height. All of these controlling regulations are in use for each detached residential zone for the four Municipalities. (See Table 2). However, each Municipality has placed a different emphasis as to the relative importance of these conditions when applying them to their various residential zones. The application of these regulations varied considerably between Municipalities, even on comparable sized lots. There was an overall pattern to reduce the dimensions of these regulations as the lot size is reduced.

The review of the various control regulations pertaining to detached housing has found the following:

1. Each of the Municipalities uses the same type of regulations. However, their application differs widely.
2. Within each regulation, such as site area or setback, the controlling dimensions differ for similar residential zones for each of the Municipalities.
3. As lot size decreased, adjustments were made to certain regulations. However, it was not possible to establish a consistent pattern or to explain why there were not changes to all regulations with each decrease in lot size.
4. Each Municipality has the discretion to interpret what are appropriate controlling dimensions.

5. Some consistency of lot size, width, and setbacks, has emerged for the smallest lot size for each of the four Municipalities.

Table #2 Site Regulations

<u>Municipality</u>	<u>Zone</u>	<u>Site Area m²</u>	<u>Max. Site Coverage</u>	<u>Site* Density</u>	<u>Building Height</u>	<u>Building Set-Backs (M)</u>		
						<u>Front</u>	<u>Rear</u>	<u>Side</u>
Burnaby	R1	890	30%	N/A	9.8	9.0	9.0	2.4
	R2	670	35%	-	9.8	7.5	9.0	1.5
	R3	560	45%	-	9.8	6.0	7.5	1.5
	R4	800	40%	-	9.8	7.5	9.0	1.5
	R5	670	40%	-	9.8	6.0	7.5	1.5
	R9	372	35%	-	9.8	6.0	7.5	1.2
Coquitlam	RS1	650	N/A	N/A	N/A	7.6	6.0	1.8
	RS3	555	-	-	-	6.0	1.8	1.8
	RS4	375	40%	-	2 Storey	6.0	6.0	1.25
North Vancouver	RS1	4000	40%	.55	N/A	9.0	9.0	2.7
	RS2	1100	40%	.55	9.1	9.0	9.0	2.7
	RS3	660	40%	.55	9.1	9.0	9.0	2.7
	RS4	550	40%	.55	9.1	9.0	9.0	2.7
	RS5	370	40%	.55	9.1 or .65 x width	9.0	9.0	2.7
Richmond	GR	630	40%	N/A	N/A	6.0	7.6	4.0
	RIII	648	40%	-	-	6.0	7.6	4.0
	RII	540	40%	-	-	6.0	6.1	4.0
	RIV	405	40%	.55	-	4.5	4.5	2.5
	RV	N/A	50%	.45	N/A	3.0	7.5	1.2
			1 Storey				1 Storey	
			45% Mixed				9.02 1 Storey	

* (ratio of maximum allowable building area to site area)

N/A Not applicable.

SMALL LOT ZONING REGULATIONS
(4 B.C. MUNICIPALITIES).

There has been an increasing interest shown by Municipalities, during the past five years, to reduce their minimum lot sizes for detached residences and to introduce new zoning to accomplish this. A survey of Municipalities in the Vancouver metropolitan area showed that nine out of twenty-one Municipalities have created a new small lot zone within the past five years. And it appears that the closer the Municipality is to the centre of the metropolitan area, the greater its likelihood of adopting a smaller lot residential zone. This association of small lot zoning with proximity to an urban centre was also found in National Survey on this subject of Small Lot⁵.

This interest in a small lot land use has in all cases been triggered by public pressure from special interest groups and the housing industry.

Municipalities respond to this public pressure and introduce small lot zoning either as an "infill" use or as a district zone for new subdivisions. The small lot "infill" zone is a response generally to an historic housing pattern where a street or several blocks in a neighbourhood have already been developed on small lots. This new infill zoning essentially allows larger lots or parcels of land in the area to be subdivided, to conform with the neighbourhood. Three of the four Municipalities studied in this report introduced small lot zoning as a district zone for the purpose of new subdivision development.

5. Canada Mortgage and Housing Corporation, A Review of Small Lot Housing in Ten Metropolitan Areas Across Canada. P. Baldwin, 1983.

The following Table #3 is a summary of all four small lot zones and their respective controlling regulations.

Table #3 Small Lot Controlling Regulations
(distances in metric)

<u>Regulations</u>	<u>Burnaby</u>	<u>Coquitlam</u>	<u>N. Van-couver</u>	<u>Richmond</u>
Zoning	R9	RS4	R5	RV
Area	372m ²	375m ²	370m ²	35 units/ha.
Site Coverage	35%	40%	40%	50%*45%**
Site Density	N/A	N/A	.55	N/A
Front Yard	6.0	6.0	9.0	3.0
Rear Yard	7.5	6.0	9.0	7.5*or 9.0**
Side Yard	1.2	1.25	2.7	1.2
Lot Width	12.2	12.5	12.0	N/A
Lot Depth	N/A	21.0	N/A	N/A
Building Height	10.5	2Storey	9.0	N/A
On Site Parking	1.0	1.0	1.0	1.0

* One storey building

** Two storey building

N/A Not applicable.

Note: The maximum house size permitted under these zones ranges from 203 m² (2200 ft.²) to 300 m² (3200 ft.²).

SMALL LOT SIZE AND SITE CRITERIA
(4 B.C. MUNICIPALITIES).

Meetings were held with the Planning, and in some cases Engineering, staff of the four Municipalities, and of the seven questions put to the staff on various aspects of small lot zoning, one question specifically asked what process and criteria were used in establishing their current small lot zone.

The response to process was basically a Municipal staff examination of other Municipal experience in the Vancouver Metropolitan Area, as well as a review of the literature from other Municipalities and cities in Alberta. one Municipality extended its survey to Ontario. All were able to quote the minimum lot areas, lot width, maximum coverage and setbacks for comparable Municipalities and major cities in B.C. and Alberta. All were able to show that the site regulations or standards they were using were generally in line with others. When preparing their most recent zoning for their smallest lots, Municipalities appeared to give limited or no attention to guidelines prepared on this topic by the Provinces of B.C. and Ontario.⁶ The housing industry was not involved, neither were market nor user surveys specifically conducted. It was generally found that special interest groups, the housing industry, and certain politicians on Council instigated the examination for a small lot zoning.

The Municipal staff were asked what criteria were used for controlling small lot subdivisions. Thus the typical

6. British Columbia, Ministry of Municipal Affairs, Residential Services and Site Planning Standards. Associated Engineering, 1980.
Ontario, Ministry of Municipal Affairs and Housing, Urban Development Standards, 1976, 1983.

sequence of questions was, "Why did you use lot width as a regulation, and why 12.2 metres? Although the questions were structured in this manner, the responses tended to cover a number of issues.

It would appear from discussions with the Municipal Staff, and from the responses summarized below, that they are attempting to control six site planning criteria through their site regulations. These are:

Privacy: The ability to undertake activities inside and outside the house with some degree of privacy. The relationship of house proximity and what effect this has on site distances between windows and overlooking yard areas.

Parking: The capability to provide parking supply, both on-site and on-street, and to meet the total parking demand of a neighbourhood, including visitor vehicles and recreational vehicles.

Streetscape: The combination of building design and subdivision layout to produce a varied and attractive appearance.

**Usable
Yard Areas:** The provision of a large and private area on the property.

Flexibility: To provide a builder with a variety of design and siting options for house construction, as well as to allow for future housing alterations and additions.

Safety: To ensure that life safety and fire-fighting measures can be readily extended to each residential unit.

It would appear that in the past, architects and builders have been able to work within these criteria and site regulations, even though the criteria were subject to interpretation by Municipal officials. They were able to overcome any interpretations and build within the regulations because they had large enough properties to find solutions. With the introduction of the present small lot zones, and with planning officials still using the same control regulations as they have for larger lots, the Municipal staff find themselves under increasing pressure to defend their planning criteria. Evidence of this has been the preparation of Design Guidelines. However, these are at best only advisory, and for the most part the traditional site regulations remain as the controlling criteria. The effect of using these current site regulations, along with today's Municipal interpretation of site planning criteria, has resulted in a resistance to consider smaller than 370-375m² lot sizes for detached housing. This minimum small lot size is being adopted by a growing number of Municipalities in Metropolitan Vancouver.

The Municipal staff, in preparing their small lot zoning, were aware of recently developed Guidelines for Site Planning Criteria developed by the Provinces of British Columbia and Ontario that suggest small lot criteria can be 30-40% smaller than those currently being used. The staff response is generally along the lines of, "our experience suggests those guidelines are not appropriate to our circumstances."

The following is a summary and paraphrasing of responses

from staff to the existing site regulations being used to control small lot subdivisions.

- LOT AREA:
- . 370m^2 appears to be the minimum lot size today if you want a good-sized house and adequate yard space.
 - . By the time you place a 230m^2 home on a lot with a 6m back yard, you are left with a 370m^2 site.
 - . The 370m^2 lots are considered to be at the lower limit for this Municipality.
 - . The Community would not like to see widely contrasting densities in single family neighbourhoods.
 - . We could soon get to a point when the single family home is no longer a house.

- LOT WIDTH:
- . With smaller lots you must maintain a street front width to accommodate one offsite parking stall, plus auto access to property.
 - . 10 meters is the theoretical minimum street frontage that would accommodate offsite parking and onsite access. However, 10.7m (35ft.) or 12.0m (40ft.) is more practical.

- . Generally wider lots provide for better privacy and noise separation.
- . Narrow lots result in a continuous and monotonous building streetscape. When large buildings are placed on these lots, it then looks like an apartment district.
- . Narrower lots generally provide for more efficient municipal services.

SITE COVERAGE AND DENSITY

- . Site coverage of 40% is probably too high, and will give feelings of being crowded for a single family area.
- . As lot areas decrease, site coverage becomes more critical in controlling the appearance of buildings and the amount of open space and tree cover.
- . Keeping a low floor area ratio and a low percentage of site coverage minimizes the need to increase zoning controls to protect privacy.

SETBACKS:

- . Need setbacks to act as noise separation between units.
- . Front yard setbacks required for noise, privacy, and aesthetic considerations.

- . Some flexibility does exist to reduce further the front yard setbacks.
- . Side yards required for emergency and safety access to back of property.
- . Rear yards have greater setback requirements to provide adequate family outdoor areas.
- . Some Municipalities have provided a bonus system to vary street setbacks, but there has been a poor response to date. Difficulty occurs in controlling subsequent re-building.
- . If lots are to get smaller, present setback standards would provide no flexibility of building siting or building design.
- . Front yard setbacks of 6m, and rear yards of 7.5m are difficult to rationalize.
- . The National Building Code specifies building wall specifications and percent of allowable window openings when facing walls are closer than 2.4 meters (8.0 feet). Present side yard minimum setbacks of 1.5 meters allows for a natural wood or stucco wall finish. With closer construction, wall cladding has to be non-combustible.

BUILDING
HEIGHT:

- . Two storey buildings approximately 9.0m are standard single family structures.
- . Single family residential zones should allow for subsequent owners to expand to two storeys maximum limit.

Of the four Municipalities studied, one has attempted to develop a new set of controlling regulations leaving more discretion to the land developer. The developer was given a maximum unit per hectare, maximum site coverage, and minimum setbacks, similar to the CMHC standards. Lot sizes and widths were left to the developers. Richmond, who have attempted a more interpretative approach to controlling small lot development, are currently reviewing this, and expect to return to the more standard controls. The new approach created too much uncertainty for staff and developer, and also created further problems of enforcement of the more interpretative regulations.

In summary, it was found that the site planning criteria for small housing involves a high degree of subjective analysis from staff when translating criteria to site regulations.

The relationship between the site planning criteria and the subsequent site regulations for small lot housing has not evolved out of a deliberate and rational process; rather, the regulations are patterned on existing residential single family zones, and have simply been made smaller to reflect a smaller lot size.

Finally, it would appear that site planning criteria have an over-riding aesthetic perspective.

It is our opinion that it is unlikely that lot sizes will be further reduced below 370m² unless Municipalities are prepared to develop a different set of site regulations. The present set of institutional regulations has effectively limited further lot size reductions. The following diagram graphically shows this impasse:

FOR EXISTING SMALL LOTS



APPROXIMATE GROUND BUILDING AREA: 139.00 M² (1496 FT²)
(NOT INCLUDING DRIVE/GARAGE)

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SMALL LOT HOUSING COSTS AND BENEFITS

One question was presented to both staff and politician regarding the overall costs, benefits, and fiscal impact on the community of this type of small lot development

All persons, including politicians, perceived either a net gain to the Municipality or no significant impact. None of the Municipalities had undertaken studies to verify their impression of this overall benefit. Most felt that new subdivisions being completed under their present small lot zoning were producing higher assessments per acre, and a lower Municipal servicing cost per unit to both resident and Municipality. Staff recognized that with the higher housing densities, there would be greater demands on Municipal Services, but this was not seen to be significant.

Only one reference was found that suggested small lot development could attract a different life style and income group.

The following is an excerpt from a September 23, 1980 Burnaby Planning Report describing the factors that should be considered in small lot development:

A survey questionnaire of three existing small lot single family subdivisions in Richmond was carried out in 1979 to determine the view of the existing residents in these developments. The main findings were as follows:

- (1) The occupants had a lower annual income than the owners of conventional single-family houses in the adjacent areas.

- (2) The majority of the residents were previously renters, while most of the residents in the nearby conventional subdivisions were previously owners of other single family dwellings.
- (3) The desire for affordable home ownership was the main reason given for moving to the small lot subdivisions.
- (4) The majority of the respondents also expressed the view that small lot single-family housing was preferable to townhouses, duplexes, and apartment units for family living, and provided a good alternative to the increasingly expensive single family dwelling on a standard sized lot.

From comments which have been received from Municipalities with small lot single-family subdivision zoning designations, the costs and benefits for their introduction of this zoning included such factors as a reduction in servicing costs, use as a redevelopment and infill tool, a more efficient use of land, an increased range of available housing types, and, probably the most frequently cited advantage was that, due to rising land costs, smaller lots provided a more affordable means of home ownership. No actual cost benefit studies have been carried out to verify these opinions.

All Municipalities agreed that smaller lots over conventional lot subdivisions do produce for the builder a lower

land and servicing cost per lot. An estimate of these savings to the lot purchaser ranged from minimal to 20%.

In summary, the cost benefit issues of small lot subdivisions is seen by the Municipalities as having a net benefit to both Municipality and consumer. However, under further questioning, the staff and politicians were less sure, and felt that this issue should be further investigated if small lot subdivisions were to become a more extensive land use.

SMALL LOT MARKET PERCEPTION

Both staff and politicians were asked if they felt there was a market for still smaller lots in their specific Municipality as well as in the region generally. There was a mixed response from the staff, most believing that the profile of their Municipality was primarily single family, and that there would not be a sustained strong market for this housing. Some indicated there might be a singles and retired market for this type of house.

A great deal of concern was expressed about the anticipated negative community reaction to this form of housing which would be perceived as having a negative effect on the neighbouring land values. The basis for this concern could not be documented, and was therefore not pursued.

The initial results from a survey being conducted on visitors to the HUDAC Triple-A house in April of 1983 found that considerable interest was shown to this form of housing, including families, as an alternative to living in multiple residential units. This favourable response was qualified with reference to the need for this housing being appropriately priced.

The response from the politicians for this type of smaller lot housing was quite favourable. The politicians expressed interest in obtaining a better perception of the market demand for this type of residential unit, as well as the zoning controls that may be used. Most, however, expressed difficulty in being able to visualize the built forms, open spaces, and streetscapes that would result from this type of land use.

A series of residential small lot sketches were prepared (See following pages) and used to focus discussion on both the Municipal small lot zoning controls, as well as the site planning criteria such as privacy, open space, parking safety, etc. The drawings purposely ignore existing small lot zoning and control regulations such as density, lot areas, setbacks, etc., but do respect site planning criteria of privacy, open space, parking, safety, etc. The authors recognized that these small lots would require a different set of site regulations and zoning than presently exists.

The following small lot drawings were used, along with a short description of each showing how they were able to address site planning criteria and still provide an averaged sized house (111m^2 - 186m^2 , excluding basement).

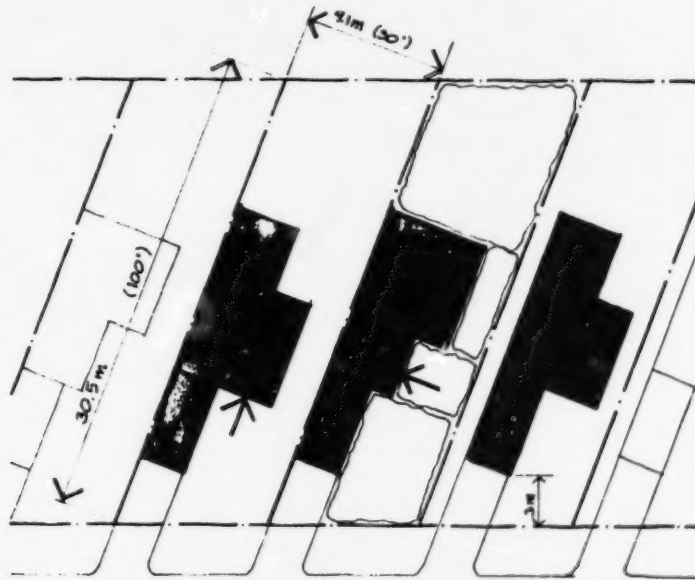
The authors believe that these examples provide equal or better design solutions to the existing Municipal small lot zoning and do so on lots that are 30% - 50% smaller. All existing site planning criteria such as streetscape, open space, privacy, safety, parking, etc. are addressed. The one criteria that changes is building flexibility for individual lot builders. These drawings place more limitations on where and how to build each house, and this in turn would require a different form of zoning and a different set of site regulations. This alternative approach to regulating detached housing is discussed in the next section.

Small Lot Housing Study

narrow, angled lots

lot area: 279 m² (3000 ft²)
 max. house area: 186 m² (2000 ft²)

max f.a.r.* 0.66
 max site cov. 45%
 * including garage



option of ...

- two 1.2 m sideyards, or
- zero lot line with 2.4 m private, usable sideyard.
- angled homes appear larger from the street.
- guaranteed variation in setback from the street

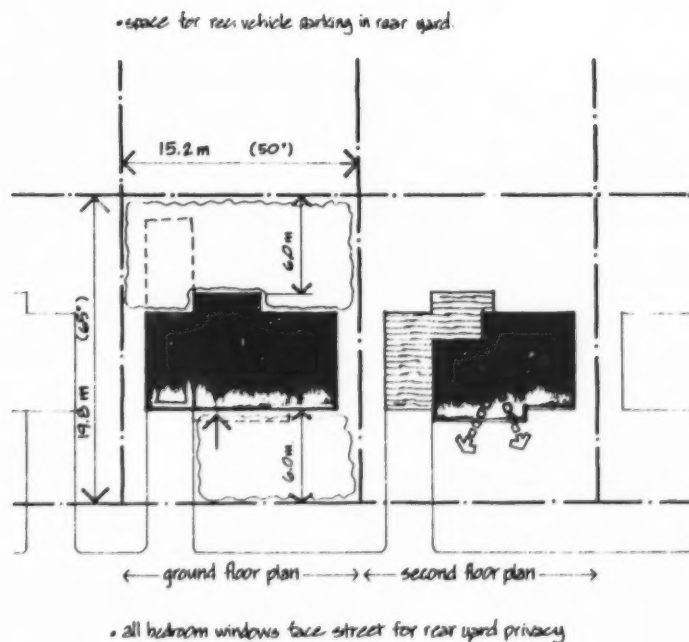
The purpose of this concept is to explore ways of varying the design of narrow lots.

- Angled lots insure variations in set-back along the street
- Narrow homes look wider because they are viewed at an oblique angle.
- Rear yard appears slightly deeper because of its shape
- Provision of zero lot line siting provides for usable side yard spaces which are private.

wide, shallow lots

lot area: 302 m² (3250 ft²)
 max house area: 167 m² (1800 ft²)

f.a.r.* 0.45
 site cov. 30%
 * including garage



The purpose of this concept is to demonstrate the potential for maintaining a conventional street scape appearance while significantly increasing densities.

Benefits

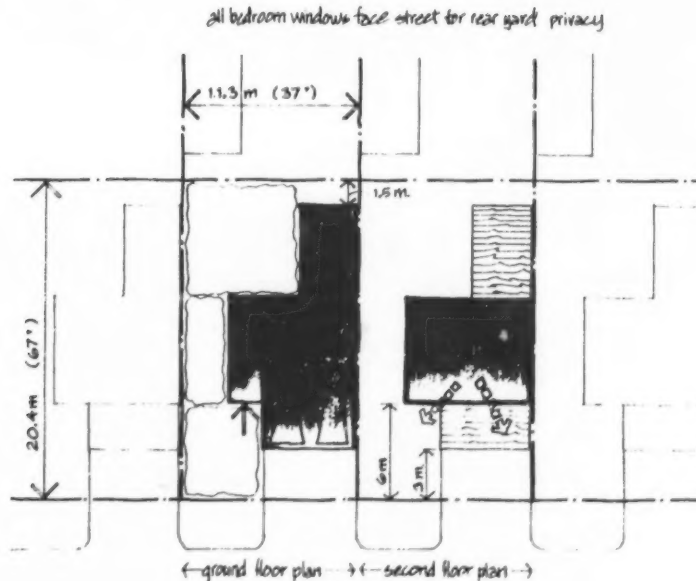
- Conventional appearance along street.
- A potential for pushing recreational vehicles into the rear yard.
- By requiring second storey windows to face a street, the neighbours' rear yard privacy is insured.

compact lots

lot area:
house area

230 m² (2479 ft²)
111.5 m² (1200 ft²)

f.a.r.* 0.57
site cov. 42 %
* including garage



- zero lot line with 3.0m private usable sideyard.
- 7.6m x 7.6m private rear yard

The purpose of this design concept is to investigate the potential for reducing traditional front and rear yard set-backs.

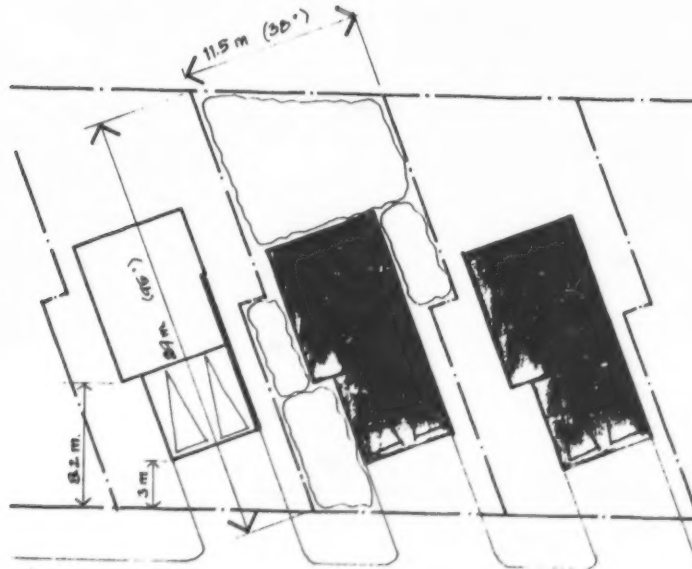
Benefits

- Home maintains conventional requirements for car garage
- Siting provides for 25 foot square private rear yard as well as side and front yards.
- Provision for one visitor parking space on street.
- By requiring second storey windows to face the street, the neighbours' rear yard privacy is insured.

angled offset lots

lot area 334m² (3600⁺)
house area 134m² (1440⁺)

f.a.r.* 0.51
site cov. 31%
* including garage.



- 3 m sideyard on both sides of house
- angled homes appear larger from the street.
- automatic variation in setback along the street.

VARIOUS OF set back, single storey elements and different roof forms and materials help provide ambience of individuality

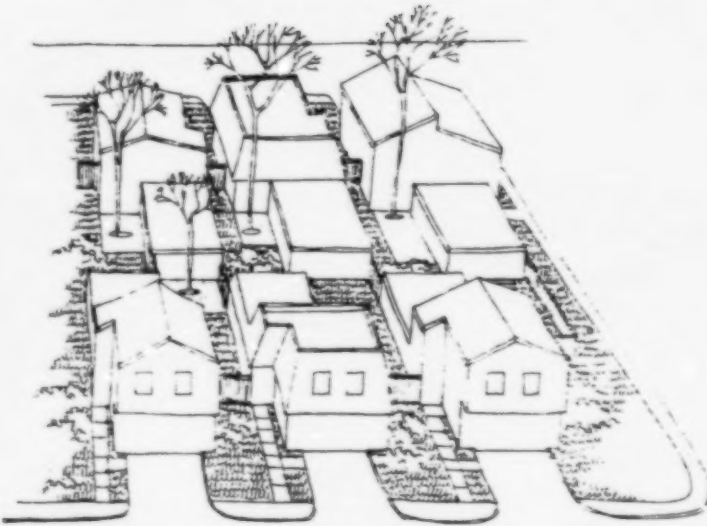
The purpose of this concept is to explore the development of irregular lot shapes.

Benefits

- Lot feels wider than it really is
- Each home has two 3 meter side yards
- Homes are separated by 4 1/2 meters of space (wider separation than in conventional subdivision design)
- Angled homes provide similar benefits as previously indicated on the narrow angled lot concept.

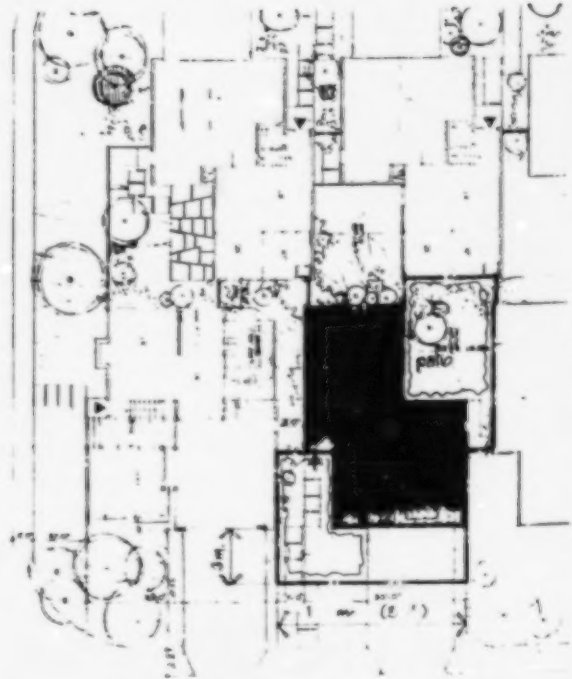
offset interlocking lots
 lot area 184 m² (1980 ft²)
 house area 111 m² (1200 ft²)

f.a.r.* 0.81
 site cov. 48%
 *including garage.



2nd floor windows face street for rear yard privacy

unit relationships



The purpose of this design concept is to explore the potential of reducing lot sizes down to a theoretical minimum while insuring adequate livability.

Benefits

- by requiring second storey windows to face the street, the neighbours' rear yard privacy is insured
- Each home contains a small private entrance court yard and private rear yard.
- Provision for one visitor parking space on street
- Home maintains conventional requirements for car garage.

A NEW APPROACH TO SMALL LOT HOUSING

The following quote from a 1980 Burnaby Planning Department Municipal report to Council highlights the current Municipal approach to small lot development, and is fundamentally different to that being proposed in this study:

Small lot housing subdivisions are essentially single family dwellings built on lots smaller than conventional lots (i.e. 50 x 120 ft. in the R5 District). It is an attempt to provide the amenities of the traditional single-family home by using less land area. The aim is to achieve higher residential site densities (i.e. larger number of dwelling units per acre) by reducing the size of the lot, while preserving the residential livability.

This approach of viewing small lot housing as an extension of the single family house is creating some built-in resistance to further reductions in lot size. This resistance can be seen at the staff level, where the zoning controls are becoming less tolerant to further reduction. Similarly the building inspector and engineering staffs are experiencing increasing site visits per small lot due to building violations which encroach more frequently. Planners claim the housing industry appears to be overbuilding the small lot, which is resulting in a lesser quality of street scape. Complaints from residents regarding building or parking infractions are also becoming more frequent with the small lot size.

On the demand side, the housing industry, public groups, and individuals, are lobbying for further reductions to single family lot size.

The common thread running through these conflicting pressures is that small lot housing is being seen by both public and private sectors as a small single family dwelling, and there is an established North American image and expectation of what a single family home should be. The approach being used to small lot housing is similar to Detroit's approach to the sedan: produce a smaller version of the same - a compact sedan.

A new approach would be to look at small lot housing as an extension of the multiple home concept. Thus a detached town house creates a separate set of images and expectations as compared to a small lot single family home, and yet the densities of town houses and small lot houses are very similar.

Using this approach, small lot zoning controls would be based on a multiple residential zone, and owners of these units would arrive with a different set of expectations. Today the builders and owners of town houses already expect less flexibility and more controls, and it is on this existing base that a new small lot housing zone could be established.

This multiple housing or detached town house approach to small lot development, proposes that greater controls be placed on the building, its siting, its building envelope, and fenestration. It is not suggesting that land developers pre-design all small lot housing as part of the subdivision approval process, but it is suggesting the need for building controls rather than site regulations. First time developers would have more flexibility than exists today, but subsequent

modifications would be more controlled.

The previously prepared drawings indicate some obvious building height limitations, floor area, and fenestration limitations.

The development of these or similar types of building controls into a new zoning document needs more study, particularly in the area of enforcement of regulations. However, since most Municipalities have an established zoning and redevelopment process for multiple building controls, it would not be a complex task. Certain building controls could take the form of a covenant, and be registered on title.

The Development Industry is familiar with multiple residential zones and the associated development process, so would not find this approach to small lot housing too unusual.

CMHC INSURANCE CRITERIA

The size and site control standards currently employed by the four Municipalities under study do not violate the CMHC Site Planning Criteria. In fact, if Municipalities continue to use their present site control standards, single family lots are not expected to be reduced much further.

Should a different approach be taken to the development of a smaller residential lot, i.e. in the form of detached town houses that utilize interlocking rather than linear lots, then the resulting greater density will require more careful co-ordination with the Site Planning Criteria.

The CMHC Planning Criteria Intent Statements do address the small lot subdivision; however, some specific solutions may require further attention at these high densities. For example, with increasing densities, separation distances and architectural design become more critical, particularly the indoor/outdoor activity relationship. With these higher densities there is increasing concern about protecting outdoor privacy from overlook conditions into neighbouring yards and patios. It might be timely to conduct a user survey of existing small lot homes in Alberta and Ontario to test the sensitivity of certain site planning solutions at higher densities.

CONCLUSIONS

- . There appears to be a lack of a deliberate or rational process in the establishment of small lot zoning and site regulations in the four Municipalities surveyed in the Metropolitan Vancouver area.
- . Most area and site regulations were borrowed from other Municipalities and were similar to those used for larger lot subdivisions. There was one exception to this, however, and it appears that the exceptional zoning controls developed by Richmond Municipality are now being revised and will likely conform with those of the other three Municipalities.
- . The result of Municipalities taking this approach toward small lot zoning has resulted in a uniformity of minimum small lot site planning criteria.
- . The site regulations are now limiting the design flexibility of the lots, to approximately 370m².
- . The result is that lot sizes are unlikely to be reduced any further unless site planning criteria is more defined or site control regulations are changed. The latter are not expected to change as they are the basis for all single family zoning.
- . Municipalities are facing an impasse in the provision of smaller lot zoning unless they take a different approach to small lot housing.
- . Site regulations are primarily based on aesthetic and liveability criteria. No Municipality has attempted to

measure the fiscal impact from this type of land use.

- . It is possible to build an average-sized home (111m² - 186m²) on lots 30%-50% smaller than presently exists, and still incorporate site planning considerations, e.g. privacy, open space, streetscape, safety, and parking.
- . Small lots for detached housing could be developed from between 185m²-280m².
- . Municipalities will be required to place a greater emphasis on building controls that would include siting, building heights, and a building envelope, as well as fenestration controls for this new form of small lot zoning. Subdivision plans would require some building information conditions, but would not require the pre-design of buildings.
- . The benefits of providing this smaller lot housing would be to both Municipality and consumer. The Municipality would obtain a more efficient use of land, and lower servicing costs per unit, and the consumer would have an increasing range of available housing types and prices.
- . The present status of small lot subdivision has not affected the CMHC insurance criteria. Reducing small lot sizes further under the suggested detached town house concept will require more careful co-ordination with the application of CMHC criteria, and could be developed without violating the CMHC Site Planning Criteria.

RECOMMENDATIONS

1. The staff and politicians in each Municipality expressed concern regarding the strength of the long term market for this type of housing. In particular, they would like to know the appropriateness of this form of housing for families.

It is RECOMMENDED that a User Survey and Market Survey be conducted. The User Survey would assist in developing the zoning controls that protect the site planning criteria, and the Market Survey would assist in determining the long term demand and the potential user profiles.

2. Most individuals had difficulty visualizing 280m^2 lots with 180m^2 of housing. Politicians in each Municipality expressed an interest in becoming involved in a demonstration project in their Municipalities as a familiarization technique.

It is RECOMMENDED that a project be undertaken that provides Municipal staff and Politicians with a better appreciation of the visual impact of small lot or more land-efficient housing.

3. Both Staff and Politicians expressed the need to engage in discussion with the public and the construction industry on the small lot small house concept. Public home ownership expectations and the construction industry's performance to date of building only larger homes appears to be in conflict with this housing concept.

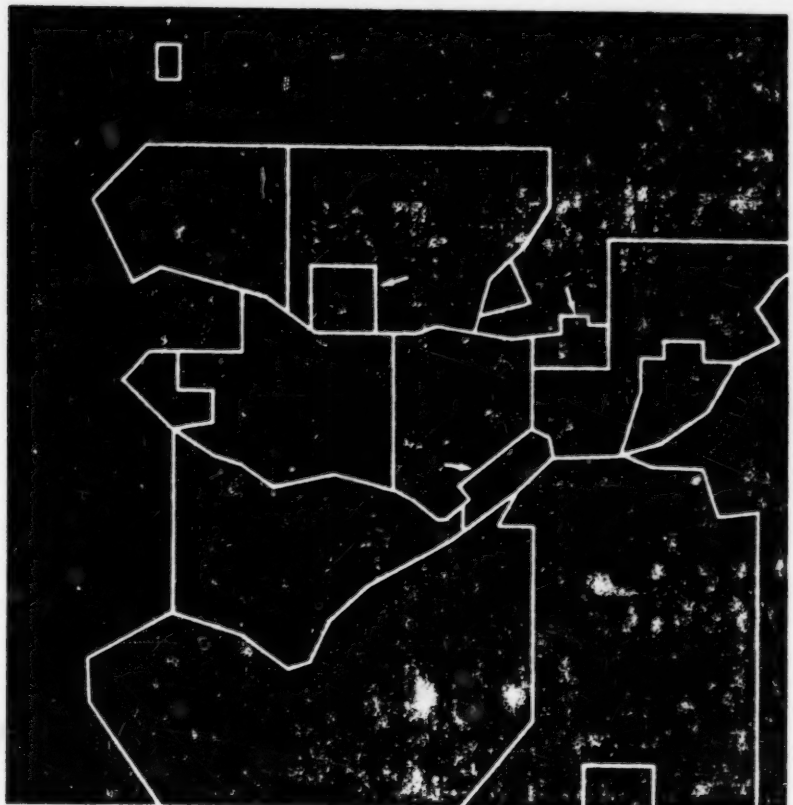
It is RECOMMENDED that a Public Information Program be set up in this emerging field of more land-efficient detached housing.

4. Municipl staff expressed interest in developing a new form of design and building-oriented controls that would not require the pre-design of units but would give enough protection for both multiple and scattered house construction in new subdivisions.

It is RECOMMENDED that a study be undertaken to develop a new form of zoning and regulations that are better suited to this more land-efficient form of detached housing.

APPENDIX I

Sampled Municipalities



1. GVRD Land Use Information System, 1981
2. Statistics Canada, 1981 Census
3. Real Estate Board of Greater Vancouver, Real Estate Trends, 1981
4. Includes Indian Reserves
- Not Available

Municipality	Area ¹	Population ²	Commercial Floorspace Total ³	Residential Units ⁴
Belcarra	313 778	430	•	189
Burnaby	9,220 22,782	136,494	606,599 6,527,000	51,844
Coquitlam	12,108 29,919	61,077	224,721 2,418,000	21,016
Delta	18,679 46,160	74,692	181,041 1,948,000	22,298
Lions Bay	222 550	1,078	•	380
New Westminster	1,565 3,864	38,550	375,836 4,044,000	19,651
North Van City	1,232 3,046	33,952	212,454 2,286,000	16,117
North Van District	16,560 40,918	65,367	126,301 1,359,000	22,267
Port Coquitlam	2,753 6,803	27,535	56,877 612,000	8,743
Port Moody	1,409 3,480	14,917	27,231 293,000	4,991
Richmond	13,315 32,901	96,154	403,346 4,340,000	33,538
Surrey	32,226 79,645	147,138	712,175 7,663,000	49,573
Vancouver	11,690 28,908	414,281	4,428,346 47,649,000	174,844
West Vancouver	9,101 22,486	35,728	268,457 2,243,000	14,767
White Rock	526 1,295	13,550	47,491 511,000	7,005
Electoral Area A (U.E.L.)	1,412 3,489	3,674	•	3,816
Electoral Area B	91,132 225,195	5,214 ⁴	•	501
Electoral Area C	5,117 12,640	•	•	922
GVRD	228,576 564,859	1,169,831	7,610,875 81,893,000	452,462

Hectares
Acres

43

Sq. Metres
Sq. Feet

APPENDIX II

QUESTIONS FOR MUNICIPAL STAFF RE: SMALL LOT ZONING

1. WHAT PROCESS DID YOU USE AND WHAT WAS THE CRITERIA FOR ESTABLISHING THE FOLLOWING MINIMUM SITE PLANNING SPECIFICATIONS FOR YOUR SMALL LOT DISTRICT.

BURNABY: RESIDENTIAL 9.

Area	372 m ²
Site Coverage	35%
Lot Width	12.2 m
Setbacks:	
Front	6.0 m
Rear	7.5 m
Side	.9 to 1.2 m
Building Height	9.8 m

2. WHICH OF THE ABOVE MINIMUM SPECIFICATIONS HAVE BEEN REDUCED FURTHER AND BY HOW MUCH, IN THE FOLLOWING DISTRICTS:

A. R4 & R5, Infill

B. R9, New Subdivisions

C. Comprehensive Developments

3. AS A PLANNER/or MUNICIPAL OFFICER, WHAT DO YOU SEE TO BE THE PROS AND CONS OF INTRODUCING A NEW AND SMALLER SMALL LOT RESIDENTIAL DISTRICT FOR NEW SUBDIVISIONS.

4. WHAT DO YOU PERCEIVE TO BE THE OVERALL FISCAL IMPACT ON THE MUNICIPALITY, OF DEVELOPING SMALL RESIDENTIAL LOTS.

5. DO YOU THINK THERE MAY BE A LONG TERM MARKET FOR STILL SMALLER RESIDENTIAL LOTS - EITHER IN THIS OR OTHER MUNICIPALITIES, AND WHO MIGHT THESE PURCHASERS BE.
6. THE MINISTRY OF MUNICIPAL AFFAIRS IN B.C., AND SIMILAR MINISTRIES IN ALBERTA AND ONTARIO, AS WELL AS C.M.H.C., HAVE PREPARED MINIMUM SITE PLANNING STANDARDS THAT WOULD PERMIT LOTS OF 250 m² FOR DETACHED RESIDENTIAL UNITS, AND LOTS OF 100 m² FOR PATIO, LINKED, AND TOWN HOUSES. HOW APPLICABLE ARE SUCH LOT SIZES TO YOUR MUNICIPALITY, AND HOW APPROPRIATE ARE YOUR CONTROLS TO PERMIT THIS TYPE OF DEVELOPMENT FOR STANDARD SUBDIVISIONS.
7. THE FOLLOWING DRAWINGS REPRESENT A VARIETY OF SMALL LOT BUILDING CONFIGURATIONS. WE RECOGNIZE THAT THEY DON'T COMPLY WITH YOUR PRESENT SITE PLANNING STANDARDS, HOWEVER. WHAT TYPE OF SITE PLANNING CONDITIONS OR SPECIFICATIONS WOULD YOU NEED TO INTRODUCE TO MAINTAIN ACCEPTABLE LEVELS OF PRIVACY, OPEN SPACE, DESIGN, PARKING, ETC.

C.M.H.C. SMALL LOT STUDY

May 26, 1983.

Griggs/Hulbert, Vancouver.

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